# Criminal Investigations, Cognitive Bias, and Wrongful Convictions

**Vanessa Meterko, Glinda Cooper, Rebecca Brown, Amshula Jayaram, and Chantá Parker**

## ABSTRACT

Decades of cognitive psychological research have taught us that there are limitations to human perception, attention, and decision-making. We cannot process every piece of stimuli that surrounds us on a daily basis, so instead we have adapted for efficiency by attuning to patterns and developing heuristics to help us navigate a complex world. While this tendency to rely on mental shortcuts often serves us well, it also has the potential to inadvertently undermine criminal investigations and lead to wrongful convictions. We are conducting a systematic literature review of research on cognitive biases in the criminal justice system and are organizing the existing works by the point in the process that they address - from evidence collection through sentencing and post-conviction. Guided by this scholarship and in consultation with academic experts and practitioners in the field, we are creating a heuristics to help us navigate a complex world. While this tendency to rely on mental shortcuts often serves us well, they can also undermine the fair administration of justice.

## COGNITIVE BIAS

An umbrella term that refers to a variety of inadvertent mental tendencies (such as confirmation bias, contextual bias, anchoring, hindsight bias, availability heuristic, implicit [racial] bias and more) which can affect perception, memory, reasoning, and behavior. The human brain is evolutionarily designed to attune to patterns in our complex world, allowing us to be efficient and make rapid decisions with little cognitive effort. Although these mental shortcuts may generally serve us well, they can also undermine the fair administration of justice.

## CONFIRMATION BIAS

The selective seeking, recalling, weighting, and/or interpreting of information in ways that support existing beliefs, expectations, or a hypothesis in hand (Findley, 2012; Nickerson, 1998).

## METHODS

- **Systematic review (scientific principles applied to literature review),** scoping review (useful for overview of a broad field)
- **Databases searched:** PsycINFO, Social Sciences Full Text
- **Search terms used:** (criminal OR justice OR police OR investigation* OR forensic*) *OR (jury OR juror OR jurors* OR judge* OR conviction* OR expert* OR defense OR defense* OR attorney* OR attorneys* OR counsel* OR counsel**) in any field (e.g., text, title) AND (“cognitive bias” OR “implicit bias” OR “cognitive dissonance” OR “tunnel vision” OR “confirmation bias” OR “interpretive bias” OR “belief perseverance” OR “asymmetrical skepticism”) in any field (e.g., text, title)
- **Inclusion criteria:**
  - Primary sources (original data)
  - Secondary data (e.g., reviews, letters, commentaries) used for background, references
  - Published or unpublished
  - Exclusion criteria:
    - No full text available
    - Implicit bias in policing
- **Manual review of reference lists in identified studies**
- **Organized by points in criminal investigation and prosecution process (see below)**

## RESEARCH AND GAPS

<table>
<thead>
<tr>
<th>Number of scholarly articles found in each category/point in criminal investigation and prosecution process</th>
<th>Type of paper</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY DATA</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>INTERVIEWS</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>SECONDARY</td>
<td>(e.g., reviews, letters, commentaries)</td>
<td>73</td>
</tr>
</tbody>
</table>

## WHERE COGNITIVE BIAS & TUNNEL VISION MAY OCCUR

<table>
<thead>
<tr>
<th>PHYSICAL EVIDENCE COLLECTION</th>
<th>Implicit</th>
<th>Racial Bias</th>
<th>Emotion</th>
<th>Ego</th>
<th>Implicit Influence of the totality of the evidence in a case?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSPECT EVALUATION</td>
<td>How does the presumption of guilt affect suspect interrogations?</td>
<td></td>
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<tr>
<td>WITNESS EVALUATION</td>
<td>How does investigator knowledge influence witness memory and behavior?</td>
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<tr>
<td>DEFENSE ATTORNEYS</td>
<td>How do defense attorneys influence assessment of clients?</td>
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<tr>
<td>JUDGES, JURIES, SENTENCING</td>
<td>How do assumptions affect in-court decision-making?</td>
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</tbody>
</table>

## CASE EXAMPLES

### CASE 1

**Levon Brooks and Kennedy Brewer**

- **1990:** 3-year-old victim abducted from home at night
- **Victim raped & murdered:** Victim’s body found in a creek

#### Detailed Description

- Victim’s body found in a pond
- These remarkable similarities might have prompted investigators to consider the possibility that these horrific crimes were committed by the same person.
- In fact, the real perpetrator (Justin Albert Johnson) was briefly considered a suspect in both original investigations.

#### Notes

- Police ultimately pursued the typical suspects instead.
- However, police are exonerated through post-conviction DNA testing.

### CASE 2

#### Case 2a

- **1992:** 3-year-old victim abducted from home at night
- **Victim raped & murdered:** Victim’s body found in a creek

#### Detailed Description

- Victim’s mother’s ex-boyfriend (Levon Brooks) convicted and sentenced to life in prison

#### Notes

- Post-conviction DNA testing eventually identified the true perpetrator who confessed to both murders and these innocent men were exonerated.

### CASE 2b

- **October 2017:** George Perrot
- **November 2017:** Eric Kelley

#### Detailed Description

- George Perrot
- Eric Kelley
- They were both wrongfully convicted of strikingly similar crimes committed in the same small town of Brooksville, MS (pop. < 2,000) in the early 1990s.

#### Notes

- These cases highlight the importance of exonerations and the need for rigorous investigation and due process in criminal cases.

## PRELIMINARY CONCLUSIONS

- Most studies demonstrate the phenomenon; few implement and measure interventions aimed at mitigating cognitive biases
- Forensic science is the leading category for number of primary source studies (n=31)
  - Few studies within each specific forensic science discipline, however
  - Most studies used experienced practitioners
  - Most studies published in past 10 years
  - In some categories, more commentaries than studies with original data
  - Research on the role of cognitive bias among prosecutors and defense attorneys is particularly sparse
  - Systematic reviews (and even scoping reviews) can contribute to an understanding of criminal justice research

## REFERENCES

- ***Note:*** For a comprehensive list of references, please refer to the full manuscript available [here](#).

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**Special thanks to Cyrus Dyer for providing graphic assistance.**